Logic is a discipline that examines the rules of correct thinking and reasoning. By "correct," the intention here is not "true information," but thinking in a "valid" and consistent manner.

Drawing a new proposition (conclusion) from certain propositions (premises) is called "inference". In other words, it means, "If this is true, then that must also be true".

It examines the structural validity of reasoning processes. It deals with the way we think and arrive at a conclusion. For example: "It is raining. Therefore, I should take my umbrella". It determines the distinction between correct and incorrect reasoning. It is considered the "tool" of correct thought.

Initially established as a branch of philosophy by Aristotle, it was examined in two parts by Al-Farabi as concepts (thought) and judgments (conclusions), and Avicenna (Ibn-i Sina) made contributions to the field of modal logic.

Al-Farabi is known as the "Second Teacher". His study of logic is divided into two fundamental stages. The starting point of logic is concepts. Terms like "human," "horse," "white," and "running" are concepts. According to Al-Farabi, these concepts must be defined and understood for us to be able to think correctly.

Avicenna (Ibn-i Sina), on the other hand, made his most significant contribution in the field of modal logic. Classical logic examines what something is (e.g., "Socrates is

mortal"). Modal logic examines how something can be. For example, "The sum of the interior angles of a triangle is necessarily 180 degrees". Another example is, "It might rain tomorrow" (It is possible, but not necessary).

Over time, logic took on a symbolic and formal structure, becoming a specialized field independent of philosophy. Modern symbolic logic was established through the work of Gottlob Frege, Bertrand Russell, and Ludwig Wittgenstein.

Today, it has also become a fundamental part of mathematics and computer science.